on the river-shore to connect with a system of pipes distinct from those for the Croton water. The saving of the latter, together with the use of the river water for power and many other purposes, would fully pay the cost of pumping, and, perhaps, even the interest on the outlay.

The paper just noticed, and several of the other reports, are illustrated by elaborate diagrams and maps. B. L. R.

ART. XX.—*Annals of Cholera, from the Earliest Periods to the Year* 1817. By JOHN MACPHERSON, M.D., Inspector-General of Hospitals H. M. Bengal Army. (Retired.) 8vo. pp. x., 235. London: Ranken & Co., 1872.

THE first chapter of Dr. Macpherson's book is devoted to the consideration of the literature of cholera. This is, as is well known, sufficiently voluminous, and yet comparatively little has been written concerning the early history of the disease—a fact, in view of their opportunities for its study, not creditable, he thinks, to English physicians in India. It is to supply this deficiency that he has published these Annals, which he says he has endeavoured to write in the impartial spirit of an historian. He therefore gives, as far as possible, the accounts of authors in their own words, allowing the reader to draw his own inferences. He, nevertheless, has a theory of his own as to the nature of cholera; and although this is elaborately stated only in an appendix, it is not difficult to see that it has influenced many of his conclusions.

In the first place, he combats the popular belief that cholera is a disease which dates only from the year 1817, by referring to the works of early writers on medicine. From the time of Hippocrates down to the commencement of the sixteenth century, there is scarcely an author who does not describe a disease, characterized by serous evacuation, suppression of urine, loss of fluid to the system, lividity of countenance, collapse, rapid recovery in some cases, protracted recovery with secondary fever in others, and by relapses.

There is, moreover, evidence that the disease was a grave one, and that many of the remedies now prescribed in cholera were employed in its treatment, and it is curious to note that the same difference of opinion existed then as now in regard to the propriety of arresting or favouring the discharges from the stomach and bowels. Among those who recommended the administration of eliminants may be mentioned Aretæus of Cappadocia, Aetius, Rhazes, Avicenna, and Ayurveda of Sucruta.

During the period, from the beginning of the sixteenth century to the year 1817, which the author next studies, epidemics of bowel affections, of considerable magnitude, appear to have been not uncommon, and there is good reason for believing that some of these were cholera. In fact, so wide spread were some of the epidemics that they gave rise, in France, to a popular rhyme,[1] which, while it embodies some sound advice, also shows what were the general impressions of the causes of the disease. It is, of course, impossible, in a brief notice, such as this, to follow Dr. Macpherson in all his investigations, and we will, therefore, content ourselves with saying that, among English physicians, Sydenham and Willis have given good descriptions of the disease, and that the latter distinctly recognized the profound impression which is made upon the nervous system. Both Sydendam and Willis condemn the use of evacuants, although neither of them recommends that the discharges should be abruptly arrested. The former gave diluents in the early stages, but soon had recourse to laudanum, and continued its use longer than has been customary in more modern practice. Willis recommends cordials and opium.

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[1] Tiens tes pattes (feet) en chaud,
Tiens vides tes boyaux (bowels),
Ne voyez pas Marguerite
Du cholera tu seras quitte.

The account which Sir John Pringle gives of the prevalence of cholera, dysentery, and fever, in the low countries, is interesting, especially with reference to Pettenkofer's theory of the origin of the first-named disease. When speaking of intermittent fever, he says: "By looking into their wells, it is easy to determine the healthiness of their villages. These wells being fed by the underground water, and being observed to sink proportionally to the drought in summer, are at once a proof and a measure of the constant exhalation of this concealed water, through the pores of the earth, occasioned by the heat of the sun." Another physician, Dr. Tralles, expressly refers the oppression of the circulation to the blood being drained of its serum, and attributes the disease to the sudden refrigeration of the body during great heat—a theory which, in some form or other, has been more or less held in all ages. We also meet with the expression rice-water evacuations—usually considered the characteristic of Indian cholera in the histories of some of these epidemics. Several epidemics of colic are also described, but it is difficult to believe that any other form of colic than that dependent upon lead-poisoning can be epidemic, and even when arising from this cause, it is not likely that it would extend further than the country in which it originally appeared.

There is also evidence of the existence of cholera in an epidemic form in India during the same period—our knowledge of it in different localities varying, of course, with the degree of intercourse between that country and Europe. The earliest accounts of the disease are furnished by the Portuguese, who speak of its occurrence in 1503, at Goa, as if it were not an unusual circumstance. Perhaps there can be no better evidence that the epidemic of 1817 was not regarded by the natives of the country as a new disease, than the fact that, during its prevalence, they went in numbers to the shrine of Oola-Beebee (Lady of the Flux), who had been worshipped as the goddess of cholera for centuries. Moreover, the existence of a tolerably acute form of the disease, in Arabia, did not escape the observation of Karsten Niebuhr[1], in 1761-63. M. de Gentil and M. Sonnerat, also give admirable descriptions of cholera as it occurred in India. Mr. Jameson, to whom we owe an account of an outbreak at Ganjam in 1781, says that the disease was so violent, and so often proved rapidly fatal, that it was, at first, attributed to poisoning, especially through the drinking water, but afterwards to vicissitudes of weather and to exposure of the troops. In 1782 we find the use of castor oil recommended by Curtis, but he evidently did not rely upon it to any great degree, for his treatment in the main consisted in the use of strong ammonia and stimulants, with some opium.

The year 1817 is one of great interest to the student of cholera; for although Dr. Macpherson has shown very clearly that the disease did not originate then, there is no doubt that it assumed, at that time, a much more aggravated form, and that epidemics have since been more frequent and severe. Another popular error which he also corrects is the belief that the epidemic of 1817 began in the Sunderbunds, or in a small way at Jessore, for in that year there was a fatal case of cholera in Fort William, in the month of March. In May and June the disease was raging epidemically in Kishnaghur and Mymensing.

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[1] Voyage dans les Mers de l'Indé, 1779.

In July it was at Sonergong, in the Dacca district, and as high up the river as the large city of Patna, and it did not reach Jessore till August, and not till after the middle of the month. It broke out at Calcutta at much the same date or a few days earlier. When it first appeared at these places, although occurring later in the year than usual, it was considered, by the medical authorities, the ordinary epidemic of the season, presenting, however, symptoms of unaccustomed violence. It appears, however, to have been thought, for the first time, contagious, and it had, undoubtedly, acquired a much increased power of spreading.

In regard to the causes which led to the epidemic of 1817, Dr. Macpherson says, the most reasonable conjecture is, that the disease was intensified by the unusual weather of that year.

> "In the lower and western portion of the Gangetic Valley, there was a long protraction of heavy rain (one hundred and twenty inches, or nearly double the usual amount of rain, are reported to have fallen during the year), while in the eastern part of Bengal things wore a different appearance. In that quarter, there was a deficiency of rain, and the rise of the river was four feet short of its usual height. There was, therefore, undoubtedly, the influence of unusual weather at work. We have already said, that it is known to induce attacks of illness in individuals, and also to influence the course of epidemic diseases. What further power over disease it has, no one can pretend to lay down positively. Incapable though it may be of producing a new disease, yet it may possibly be able to intensify an old one, and cholera was an old malady in Bengal, though latterly quiescent."

He shows very conclusively that it could not be attributed either to overcrowding, bad food, famine, or to filth. In reference to overcrowding, he says:—

> "But no cause of such a nature existed in Bengal in 1817. We know of no great pilgrimages or assemblages there in that year. Besides, the pilgrims to Juggernath only skirt the delta of the Ganges, and the pilgrimage to Saugor Island, at the mouth of the Hooghly, is comparatively a small one. Cholera did not become epidemic till some months after the season of pilgrimage, and there is no evidence to show that in the early part of the year there was cholera at either of these places."

The methods of treatment adopted by physicians at the beginning of the epidemic do not present much novelty. The old question whether to promote the removal of the morbid secretions by means of emetics, purgatives, diluents (or in modern phrase, eliminants) or not, continued to engage attention, as in the days of Hippocrates.[1] It soon became evident to intelligent practitioners that the administration of diluents only led to waste of time—that nothing could be more dangerous than any delay in supporting the patient, and that by giving aperients and emetics in the commencement, the virulence of the disease was increased. They, therefore, usually became advocates for the early use of stimulants and opium. Were it not that the application of the actual cautery to the feet has passed out of use, and that pepper is no longer placed in the eyes of patients to rouse them from collapse, we should have little reason to congratulate ourselves on the advances made in the therapeutics of the disease.

It is noteworthy, especially in view of the theory of cholera, which Mr. Macnamara advocates, that among the general directions which were given for the avoidance of the disease, people were recommended to have their drinking water boiled. Among the exciting causes of the disease are mentioned the use of indigestible articles of food, and sleeping with the abdomen uncovered.

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[1] In the face of this evidence, the claims to novelty which have been made for the eliminant plan of treatment by castor oil or other purgative, cannot be maintained.

The reader who is interested in the subject will find the nomenclature of cholera very fully discussed in a separate chapter. The author thinks that, on the whole, the most satisfactory derivation of the word cholera is from χολος, the old form of χολη bile, and χολερη is from η χολερη νοσος, the bilious disease, or disease of bile. A curious fact in connection with the nomenclature of the disease is the corruption, by the French, of the Hindoo word *Mordeshee* or *Morshee*, into *mort de chien*, which, according to Père Martin, had taken place as early as 1702.

In an appendix "On the Analogies of Cholera Nostras and Cholera Indica," Dr. Macpherson has endeavoured to prove that these diseases are really identical, and that the only points of real difference between them is one of degree, which he does not regard as sufficient grounds for separating them, especially so long as we continue to regard *scarlatina simplex* and *scarlatina maligna* as the same disease, and are willing to regard the various manifestations of influenza as due to one cause. When speaking of the contagiousness of cholera Indica, he says, that if we admit that epidemic diarrhœa may sometimes be contagious, it is very unlikely that this should not sometimes be true of epidemic cholera nostras also. But in addition to differences as to malignity, contagiousness, and power of spreading, the prevailing belief is, that there is a specific poison present in cholera Indica. Supposing it to be established that this specific poison really exists, for this has not yet been done, then almost identical symptoms are produced in the absence and in the presence of a specific poison, which, unlike the poison of smallpox or that of typhoid fever, does not produce any specific effects.

We have endeavoured, in the preceding notice, to lay before our readers some of the most important results of Dr. Macpherson's labours, and it only remains for us to say, in conclusion, that any one to whom the book itself is accessible, will do well to read it. J. H. H.

ART. XXI.—*Memoria Historica das Epidemias de Febre Amarella e Cholera-Morbo que têm reinado no Brasil.* Pelo Dr. José Pereira Rego. Do Conselho de S. M. o Imperador, Medico da Imperial Câmara, Presidente da Academia Imperial de Medicina, etc. etc. etc., 8vo. pp. 228. Typographia Nacional. Rio de Janerio, 1873.

Historical Memoir of the Epidemics of Yellow-fever and Cholera, which have occurred in Brazil. By Dr. José Pereira Rego, President of the Imperial Academy of Medicine, etc. etc., Rio, 1873.

THE consideration of the question of cholera in South America involves the great problem of the spontaneous development of the disease in Paraguay, a doctrine which is held by many medical men in La Plata and Brazil, though it finds there as many opposers as elsewhere.

The eminent official position of the author of the monograph, the title of which is placed at the head of this article; the facilities which he most certainly enjoyed in obtaining access to reliable sources of information; his own personal opposition to the theory of generation *de novo;* and the importance of the question he discusses, certainly justify us in expecting that Dr. Rego's book